

1. Dave- thanked members for their time and effort....proposed that he lay out a proposal...regulations have a protection level built into them...if you look at septic effluent, you to look at three components....the effluent, 36 inches of soil, and loading rate from Table 5.4. If we look at secondary effluent, we have that quality of effluent along with 12 to 24 inches of well drained soil and a loading rate equal to or better than Table 5.4 of the regulations. These could be suggested performance criteria for this policy along with the existing one already stated in Section 350 of the regulations. A PE submitting a design that deviates from one or more of these criteria (for instance, site does not have 12 inches of soil...or the sizing from Table 5.4) he can still submit the design, but VDH would be looking for the justification that the design meets or exceeds that performance standard. What would we be looking for in terms of justification? Perhaps the pe seal....or maybe reference to research ...or something else that can discuss? VDH has issued many permits under the regulations via variances....small lots, shallow to rock...hardships...VDH has issued permits with all bells and whistles...case by case basis. Suggesting that the PE designs still have to meet the same performance as the regulations. So, with these two parts as performance, PE s would be free to design systems and VDH would be looking for the justification. Rick- Table 5.4 was set up for dirty water conditions, not clean effluent...this is moving backwards...would rather be moving forward...Dave- using a different loading rate from Table 5.4 is an option for the engineer, you would simply need to provide the justification...Rick- the table is flawed because it allows higher rates for sandy soils....the idea of standard engineering practice was that we could use better ideas...Others- are we talking about using Table 5.1 for flows? Or is that up to the discretion of the engineer? Joel- I'm having trouble understanding that a prescriptive qualitative design requirement equates to a water quality standard....current policy requires the engineer to justify with reason that the design will not result in greater risk of failure than systems under the regulations...we have a new law that goes into effect in three days...and will have emergency regulations by April 2010...maybe we should just stand pat and wait....Colin- if you are going to have a performance standard, how are you going to measure it? Rick- 2551 establishes a set of standards different from the engineering standards already contained in the statute...which is the most limiting? The law has to work together. And they don't...argues that HB 2551 changes the point of compliance and thereby reduces protection....whereas standard engineering practice holds to a higher standard...which is to meet engineering principles...such as 30/30 at the end of the pipe...once the regulations change, the law may have more meaning (i.e. performance requirements)....- are you saying that the new law puts a 30/30 standard at a subsurface location below the df? Joel/Rick- yes. That was the pass fail criteria for Ecoflo/advantex....- but that was for reduced df sizing...Rick- VDH regulations do not have a table for secondary effluent. Allen- said that

when anyone came to VDH asking to use a system in a way that deviated from the regulations, they had to do something...and what they had to do was follow a protocol for testing that is described in the regs....(whether was well-executed is not part of this discussion)...and the standard against which they were judged was that the systems had to be at least as protective of public health and groundwater as systems permitted under the regulations...that is exactly what Dave's proposal says- the engineer has to 'do something' in order to justify the deviation....Joel- that's already in the policy, maybe we need to be more specific about what kinds of justification is required- like hydraulic and organic loading rates....John Aulbach- I like Joel's suggestion that we put some more guidance in the policy ...some reference points, targets...we deliberately stayed away from defining standard engineering practice...maybe we should revisit that....Discussion- you can Google standard engineering practice and you won't find anything....Ray- maybe we should focus on the justification part. Ray- some bullet point items that are part of the justification....maybe define minimums that the Dept. is looking for....what should be addressed....we do that now, as part of standard engineering. Rick- determine flow, characterization of influent loading...go on from these to take into account soil findings....treatment scheme for biological reduction...how much will occur in the treatment train and how much in the soil...with an end point in mind....Dave- today that justification is not defined...what would the parameters be? Joel- I can't get my arms around the idea that a qualitative standard falls under the umbrella of a water quality standard...we don't have that today...I've got a potential solution- if we wrote into the policy something about the qualitative standards...but don't equate that directly to a water quality standard...I'm ok with a statement of fact (like what Allen wrote in the June 17 email)...Allen- seems like we can still work around the idea of a qualitative standard...but when the PE goes to deviate from the prescriptive criteria, he can use water quality language to justify, but that doesn't mean we have created a defacto water quality standard....Justin- there has to be a way to ensure we are meeting effluent limit- secondary 30/30 is in the regs...if you deviate from that...we need to get back to the legislative language that says the design has to comply with the limits...what are those limits and how do we stick to that....Marcia- look at delegate Merricks' letter....treatment works will meet or exceed...which is what we are doing anyway....I don't see that we need to do anything more than recognize this statement. Joel- we sort of got the cart before the horse...the performance standards don't exist today...we are going to develop through the regulatory process what the performance standards are by April....so we have a 10-month interim period...so unless we are doing something really dangerous and that VDH is being forced to allow things that are doing a lot of harm...I don't see the need to change the way we are doing this....will cause controversy....Marcia- it would be good to note in this policy that performance requirements are coming....I'd like to recognize what this bill says...but I'm not sure it's going to change much about how we implement this law. Beefing up the justification requirements would be a good thing...dave- asking the group- would that be a good thing? Rick- it has to be based off of

some kind of research or else you will be laughed at by your colleagues....non-engineer may not understand the thought process we go by engineering principles.

Some stuff written on the Board:

~~Performance requirements~~ Design Criteria:

1. ~~Loading rate~~ Dosing (dosing of treatment plant)
2. Organic loading rate
3. hydraulic loading rate
4. horiz. Offsets
5. vertical offsets
6. design flow
7. EOP effluent quality
8. WW characterization
9. dispersal

Justification ~~Range~~

“I think” -----(Calculations & equations)-----Submission or published research

Discussion of the justification- John- we did avoid this kind of thing with the first GMP...and it seems good we are looking at it now. Anish Jantrania- people expect us to do designs that are no worse than what we are doing today...I have concluded that everything onsite folks have told me about soil is wrong. In my opinion the science is bogus...the rules are based on science that cannot be validated...here is an opportunity for PEs to do something...the bullet items noted there make sense..maybe a couple more...how are going to justify a hydraulic rate of 4 gpd/sf in soil that the Dept says is 0? How are you going to validate? I like your justification and I don't like yours....and if the systems doesn't work DPOR can take action against the PE...Allen- the concern that got this bill passed was that the owner is stuck with a failed system and we didn't protect public health and environment....Joel- that was not the intent of the legislation....Colin- the intent was to make sure that the owners get systems that work and protect public health and the environment the same as systems permitted under the regulations...General argument and disagreement about the bill and what it means to be an engineer or a non-engineer...Anish- yes the companies had to go through some process...and I'm not opposed to the idea that the engineer should be required to some kind of monitoring....Dwayne- what I've read about standard engineering practice- if a building collapses...it doesn't necessarily mean that standard practice wasn't followed- the practice of engineering isn't running calculations, it's knowing which calculations to run...so we look at the spectrum of “what I think but don't know...to what I know”....Joel- go back to something said about Standard Engineering practice being dynamic....it has to be dynamic and changing...VDH is the sole arbiter of what is or isn't standard practice....it doesn't guarantee an outcome...but if there is a disagreement, and Vdh issues denial...then there is the review panel....looks at the design and the justification...makes determination of yes, no whether standard engineering practice was followed....but

because standard practice changes over time, we don't have to worry about whether the regulations get updated every few years...they make recommendation to the commission who has ultimate authority....at the end of the day, it's the VDH that has control over the process. Rick- if you want to put a 30/30 limit at some point below the df, I'll take that as a big Christmas present...I won't do it....Marcia- HB 1166 doesn't give anyone the right to put in a system that doesn't protect public health and the environment at least as well as VDH regulations. We shouldn't be letting anyone get away with things that will cause more harm. Discussion of review by vdh engineers...local departments are seeking review on the vast majority of applications....Rick- if we were to say that standard engineering practice demands the engineer address certain things, that would be ok...in the same vein, adding more to the justification would help with Vdh reviewers. Discussion of performance- Dwayne- backing up in house, surfacing of effluent, these can be viewed as outcomes, not measures of performance....Colin- you've got to have some kind of measurables to assure the systems protect public health and environment same as systems otherwise permitted under the regulations. Anish- can the same results that are achieved with, say 10/10 effluent at the bottom of the trench, can the same results be achieved another way. Engineers could be subject to same testing requirements (they would be useless)....Colin- I didn't say the measurables had to be sampling...Dave- if we can agree on these 'design criteria'...[ref. Del. Merricks letter]. - in evaluating designs for STE vs SE has secondary effluent been interpreted as an end of pipe criteria? Yes....the regulation requires either septic or secondary effluent going to the drainfield. Joel- there are four things that we have to comply with are:

1. Std. Engineering practice
2. Horizontal setbacks
3. Performance
 - a. No back up
 - b. No surfacing
 - c. No gw pollution
4. Water Quality Std.
 - a. St. Effluent
 - b. Secondary effluent

Agreement: the nine items listed above should be added to the policy as design considerations that must be justified by the engineer.take a break and come back and talk about this....return from Break- Anish wants to add 'travel time' to Number one....Allen: what this means to me is that Whenever the engineer deviates from one or more of the criteria as contained in the regulations, the engineer will provide the justification for the deviation.....do all agree? Joel- no, if they apply you address them, if they don't apply you don't have to address them....ex. everything complies except for distance from foundation....all I have to address is the distance from the foundation. Allen- yes that's the same thing I was saying...Joel, but why do you want to limit it to just what's in the regulations? Marcia- are we making a list of things that must be justified, or things that must be addressed by the engineer? Dave- these things shall/should be considered in the design and if they deviate from the regulations they

have to be justified. Joel- all these things are part of a standard design anyway. Discussion on the Justification Range – the idea of “I think so” is probably not going to be sufficient...even on things that are well accepted...we need some concrete justification...

Anish- there has to be a scheme that allows verification of the design in between the stage where a construction permit is issued and the operation permit is issued...

- item 7 is EOP effluent quality...that can not be varied, according to HB 2551...general discussion- : you can't deviate from the effluent quality requirements of the regulations (as they relate to the site conditions of vertical offsets, loading rates, etc.)suggests that this policy needs to recognize the effluent limits in gmp 147...Engineers- no. More discussion...the bill doesn't refer to policies of the department, only regulations...Sounds like we really don't have consensus on the statement above...Dave- the department has issued many permits by variance, on a case by case basis...some with very strict performance requirements...are you saying that all engineered systems have to come up those performance standards? - my understanding of gmp 147 is that...it implements section 448 of the regulations....so the policy is implementing the regulations....so when the bill says meet or exceed the effluent standards....so wherever effluent standards a delineated they should be used as a benchmark for these engineered systems. Allen- the testing protocols that went before gmp 147 used as the baseline for evaluation the question of whether they were at least a protective of public health and groundwater as systems permitted under the regulations...so, gmp represents one way to achieve the same protection as the regs...but it isn't the only method..there may be other ways....and the policy can't be enforced as law since it hasn't been through the APA process...Allen- drew a picture representing current reality under the regs for installation at grade with secondary effluent at loading rate from the regulations....then said- is saying anytime you deviate from these conditions, your only option is to go to the higher treatment level (like the one in gmp 147)...whereas the engineers are saying there are other ways to be as protective of ph and environment than just the treatment level...Rick- 10/10 doesn't mean anything to a soil system....Anish- if the whole point of this is to prevent engineers from reducing drainfield sizes using 30/30 treatment, then I don't think it's going to be very productive....Now Joel going back to saying the water quality standard mentioned in the bill is at the end of the treatment works... Allen asked, have we lost our agreement? No...Consensus that this will address HB 2551 on an interim basis at least until the emergency regulations. Rick- asks that VSPE be made a part of the meetings of the ad hoc committee on the emergency regulations...they represent a lot of engineers...